December 1963

EMO

NATIONAL DIGEST

Statement by the Honourable C.M. Drury

The Role of Preventive Medicine in National Survival

Statement by General Earle G. Wheeler

Progress Report - C.M.H.C.

Municipal Survival Planning

Legal Aspects of Emergency Planning

EMERGENCY MEASURES ORGANIZATION

THE EMO NATIONAL DIGEST

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The EMO NATIONAL DIGEST is published bi-monthly to provide current information on a broad range of subjects dealing with civil emergency planning. The magazine is published in English and French and may be obtained by writing to the Emergency Measures Organization, Daly Bldg., Ottawa.

In addition to publishing articles which reflect Canadian Government policy the Digest may also publish articles by private individuals on subjects of current interest to the emergency measures programme. The views of these contributors are not necessarily subscribed to by the Federal Government.

Director: R. B. CURRY. *Editor:* A. B. STIRLING.

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A Statement by the Honourable C. M. Drury
House of Commons
11 December 1963

MR. DRURY: The report will be, by reason of the hour, relatively brief. These estimates, as members of the committee know, were prepared a year ago. They appear as a section of the privy council office estimates contained in three votes, numbers 15, 20 and 25. In the meantime, the present government arranged for the emergency measures organization to become a separate agency responsible through its own deputy head to me as minister. At the same time, the administration of the civil defence college at Arnprior was transferred to the emergency measures organization. Since estimates for the college had been prepared by the Department of National Health and Welfare, it was deemed appropriate for the minister of that department to deal with those estimates for this year.

The objectives of civil emergency planning may be put as follows:

1. To aid our people directly and through measures taken by government at all levels better to endure the effects of nuclear war, if it should occur, so that greater numbers would survive and more of the necessary items of supply remain to meet their needs.

2. To add to the capability of Canada to meet the requirements of a modern conventional war, remembering that such a war may well place extremely severe and unique demands upon all of us and that, among other unusual conditions, there would always be the possibility of rapid escalation into nuclear war.

3. To reduce as far as possible the losses in life and property occurring because of natural disasters affecting Canada.

In the period since I have been responsible for this work I have had some opportunity to review it. One is impressed with the marked advance in civil emergency planning in the last few years made by the provinces of Canada. Several of them have given it attention to a degree quite unknown before. They tend to stress the need to prepare for natural disasters as well as for the major hazards of a possible war. They agree that these are all risks that we must recognize and that this sort if insurance is but prudent.

Vote 15 covers administrative costs of the emergency measures organization. The total staff is modest in size, numbering at present less than 100 persons, including the staff of the ten regional offices. Vote 20 includes the program for the provision of radiac instruments to measure wartime fallout and to enable forecasts to be made of impending danger to the people from this hazard. This is a program of shared costs with the provinces. Vote 25 reflects the importance of provincial and local government programs in civil emergency planning. It provides for federal financial assistance to provinces and municipalities up to 75 per cent of their costs.

Civil emergency planning, at least at the modest degree and at the level of costs we have provided in Canada, appears to be sensible. The Cuban crisis last year emphasized fully the need for instantly available emergency measures at such a time. Continued attention is required as part of our national and international effort. Civil emergency planning is part of our total defence. It merits a suitable portion of our attention, effort and money.

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Following Mr. Drury's statement, Mr. Churchill spoke for the Opposition:

MR. CHURCHILL: Mr. Chairman, this is indeed a brief report on a very important field of activity, but I think the house is glad to have had a report. Emergency measures work in Canada has now been going on for about 13 years and, as the minister pointed out, with increased emphasis during the last several years. The response by the provinces is very gratifying indeed. According to the latest issue of the emergency measures digest, as it is called, quite a substantial number of people have received training in various aspects of survival operations, which is very much to the good. The more widely knowledge is spread with regard to survival operations the better because, as the minister pointed out in a speech he made in October, some sentences of which he could have repeated here, we have to be on our guard. I am going to repeat two or three of those sentences which are taken from an address by the minister in October, 1963: He said:

> There is no guarantee, whatever we may hope, that the present mild international climate will not degenerate again into freezing weather, with or without warning. Nuclear war remains a possibility, a remote one perhaps but nevertheless a worrisome one; and as long as this condition persists we must continue the effort to improve our chances of surviving. In short, the civil emergency preparedness program is an insurance policy. As with other forms of insurance, there will be no regrets if we never collect on the policy . . .

That is a quotation with which I am thoroughly in accord. This is a form of national insurance. It is a field of activity in which every Canadian should be interested. I do not think we should take the point of view that nothing can be done in the event of nuclear war. I think that is wrong. I do not think we should take the point of view that civil defence measures are an indication that a nation can endure a nuclear war. I heard that doctrine advanced just the other day. I think that is wrong. I think it is just sound common sense to be prepared for emergencies. We do so through our defence operations in order that if conventional or nuclear war breaks out we will have forces ready to take action; but under modern conditions the civil population must be provided with an emergency measures program, even if it's war, with the awful destruction that was caused just by the conventional weapons of that period.

So it is sound common sense to have an emergency measures program, and even it has not gone too well in some areas this is no excuse for not continuing the program on a national scale and with the co-operation of the provinces. A debt of gratitude is due to those people, the director and his staff, who have carried on during the past several years without any particular public recognition or any particular blare of trumpets, because this is a field of activity in which some people are interested and some are not. Nevertheless it is vital to Canada's welfare and I hope that it will continue without abatement so that we are ready for any emergency whatsoever.

I have one note that is not quite in keeping with all that has gone before. I had an argument with the Minister of National Defence as to the role of the militia with regard to this particular problem, and I presume I will have to wait until he reappears with his estimates to conclude that debate. I think he suggested that the minister reporting for emergency measures might have something to say about the role of the militia, but I would prefer to have it right from the mouth of the Minister of National Defence himself; so I will not press the minister, who perhaps has too many other things to do than to carry part of the burden for the Minister of National Defence.

Item agreed to.

HANSARD

Questions and Answers concerning emergency measures which were raised in the House during the past session:

Caves and Underground Chambers as Survival Shelters

Question No. 465—MR. FISHER:

> Has the emergency measures organization made a survey of caves and underground chambers in Canada with a view to determining their fitness as survival shelters and, if so, how many such caves and underground chambers has it found in the ridings of Port Arthur and Fort William?

MR. DAVIS: In 1962 the Department of Mines and Technical Surveys conducted, on behalf of the emergency measures organization, a survey of all active mines, and some inactive mines of the adit type, which were readily accessible. In considering mines as potential fall-out shelters the most important factors are access, habitability, and proximity to population centres. The survey did not include caves since large caves are normally not suitable for the accommodation of people for any length of time. Operating mines were selected for survey because they have pumps, hoists and ventilation equipment available for use. Except in the case of mines of the adit type, no consideration was given to abandoned mines mainly because of inaccessibility, but also because of the expense required to make them usable. From an engineering viewpoint it would be feasible to use some mines as fall-out shelters.

Five mines in the ridings of Port Arthur and Fort William have been found to have characteristics that may be of the sort needed for fall-out protection for sizeable numbers of people.

Water Supply in Nuclear Attack

Question No. 466—MR. FISHER:

> 1. Has the government provided for supplies of water across Canada which will be protected from contamination from

radioactive fall-out in the event of nuclear attack and, if so, what has this program cost?

2. If not, what source of supply of water does the government recommend for survivors of a nuclear attack?

MR. DAVIS: 1. No. The provision of water safe for human consumption is a public health matter and responsibility for it lies with the provinces and municipalities.

The government, through emergency health services and the emergency measures organization, provides advice to provinces and municipalities in respect to the following factors concerning wartime contamination of water by radioactive fall-out:

(i) it recommends, as standards applicable in wartime, levels of contamination beyond which water sources should not be used;

(ii) it recommends methods of testing water in regard to these standards;

(iii) it provides information on the techniques for decontaminating water;

(iv) it is providing an operating manual for waterworks engineers for the management of water contaminated by radioactivity in water systems;

(v) it has provided, through planning pamphlets such as "11 Steps to Survival" recommendations as to the storage of water in homes as an emergency measure;

(vi) it provides lectures in the emergency health services courses such as those for public health officers, sanitary inspectors and sanitary engineers, dealing with the contamination of food and water and providing advice on techniques for decontaminating such supplies.

Provincial or municipal projects for establishing safe sources of water as part of emergency planning for nuclear war may be eligible for assistance under the financial assistance program. One such proposal accepted under this program was a by-pass-pipeline in connection with the Vancouver district of Delta reservoir. This project adds considerably to the reliability of the water supply. The total cost of this project was $1,888 of which the federal share was $1,416.

Additionally, some private organizations had taken steps to provide safe wells for their own use in emergencies.

2. (a) Any source of water in covered storage; (b) water originating in bored well; (c) rivers, since they are capable of self-decontamination. Relatively soon after attack the level of radioactive contamination of rivers may be so small as to be acceptable.

It should be understood that the emergency of nuclear war may make it necessary to accept somewhat higher levels of radioactive contamination for short periods than would be acceptable over long periods in peacetime.

Preferred Types of Survival Shelters

Question No. 468—MR. FISHER:

1. Has the government arrived at a decision on (a) what is the best type of individual survival shelter in the event of a nuclear attack (b) what is the best type of community shelter?

2. If so, what steps, educational and financial, has it taken to ensure the proliferation of such protection?

3. What success or response has come to these efforts?

MR. DAVIS: 1. (a) and (b) The government has provided, over several years, thorough research into the matter of the best types of shelter for Canadians having in mind the conditions likely to affect this country in nuclear war. From this, designs and structures have been developed, both with respect to home shelters and to the congregate or community type. The designs for such shelters have been published in convenient pamphlets which cover a wide range of fall-out and anti-blast shelters.

The government, further, has had wide surveys made of larger buildings in Canada to determine their potential protection against radioactive fall-out. The emergency measures organization provides information to all who ask for it on measures that can be taken to improve fall-out protection in larger buildings.

2. Through broadcasts, displays, pamphlets and manuals, information on fall-out has been provided for public use. This has cost the federal government more than $630,000 over the last two fiscal years. Provincial and municipal governments further this program of public information by ensuring ready distribution of the material provided by the federal government.

Under the National Housing Act, loans or increases on present mortgages can be provided for home owners in order to build shelters.

3. (a) It is not known how many shelters have been built in Canada—it is probably a few thousands.

(b) 208 persons have availed themselves of arrangements under the National Housing Act.

(c) It appears probable that many fall-out shelters have been built privately without any public knowledge of their construction. It is not possible to estimate their number. Moreover, many no doubt have put to use the information given them on improvised shelter, or are prepared to do so at short notice.

Shelter Protection, Nuclear Attack

Question No. 469—MR. FISHER:

1. In consideration of its role, what population estimate does the emergency measures organization use?

2. How many of this population total have been provided at this date with fall-out shelters to ensure survival in the event of nuclear attack?

3. Of the total protected by fall-out shelters, how many shelters of a large-scale kind have been provided by and through emergency measures organization; for what number, and what kinds of people (e.g. government officials)?

4. How many fall-out shelters, either individual and family or community or otherwise, exist at present in the ridings of Port Arthur and Fort William?

5. How much money, to the knowledge of emergency measures organization, has been spent on fall-out shelters by (a) individuals (b) private corporations and associations (c) provincial governments (d) the federal government?

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6. How much money has been spent, and for what classification of supplies, to stock fall-out shelters and regional depots to supply survivors of nuclear attack?

7. What supplies, in what form of protection are located in the ridings of Fort William and Port Arthur to look after the welfare of survivors of nuclear attack?

8. What cost figures does the emergency measures organization have, giving the total money spent in Canada, for ensuring the survival of Canadians in the event of nuclear attack, by year, and in total?

MR. DAVIS: 1. Population estimates are provided by the dominion bureau of statistics based on the 1961 census.

2. The only fall-out shelters provided to date are those constructed by persons for themselves.

3. The government has built a number of operating headquarters units to be used in wartime for warning the public of attack and for directing the armed forces and civilian emergency operations. These have protection against fall-out but they are not regarded as shelters but as operating units.

4. A report secured in 1962 from officials in Fort William and Port Arthur advised that one fall-out shelter was known to them to have been built in each city. There are probably others.

5. Information is not available to answer this question.

6. No public funds have been spent on supplies to stock fall-out shelters. The only stockpile developed to date is that needed for emergency medical supplies.

7. None, other than those normally held for peacetime purposes or those that may have been put aside by individuals or families.

8. The figures available to the emergency measures organization are for federal expenditures and are those given in reply to question No. 467 (3).

Civilian Survival, Nuclear Attack

Question No. 470—MR. FISHER:

1. Does the Canadian military carry out studies in probability using the theory of games and, if so, has it applied this theory to the probabilities of civilian survival in Canada in the event of a nuclear attack on (a) Canada (b) the U.S.A.?

2. What are the estimates of civilian population survival resulting from these studies, giving the various modes of attack?

MR. HELLYER: 1. Studies have been made but not using the theory of games.

2. These analytical studies involve the use of a great many theoretical variables, including a number of imponderables associated with Canada's position to the main target of attack. These considerations do not lend themselves to an accurate estimate of population survival.

Prevention or Survival of Nuclear Attack

Question No. 467—MR. FISHER:

1. Does the government consider a nuclear attack which would affect Canada to be a possibility?

2. If so, in simple outline, what steps has the government taken to (a) prevent such attack through military measures (b) ensure survival and some continuity for the population at large aside from military measures?

3. What sums by year have been spent, in rough estimate, for the development of government objectives as described in 2(a) and 2(b)?

4. What is the estimated spending in these two categories for the next fiscal year?

MR. DRURY: 1. Yes.

2. (a) Canada is a member of the NATO alliance and has entered into agreement with the United States for the joint defence of the North American continent, and supports the peace preserving missions of the United Nations.

(b) The following are some of the more important measures to assist the population in surviving nuclear attack:

(i) A warning system has been developed to warn the public of the likelihood of attack or fall-out;

(ii) A continuing program of public information is operating in co-operation with provincial and local authorities to inform the public of the hazards of nuclear war and the measures they should take to protect themselves;

(iii) An emergency broadcasting system is organized whereby the public, during an emergency, will be given information, advice and instructions;

(iv) The Canadian army has prepared itself to carry out rescue operations in areas damaged or seriously contaminated;

(v) Since 1962 radiation detection equipment has been made available to provinces so that radiation hazards can be detected and measured;

(vi) Governments have been making plans and the required preparations to be able to do what will be needed of them at the time of emergency;

(vii) The federal authorities have provided guidance and financial assistance to provinces by means of which many municipalities have developed plans whereby they can furnish essential services such as those with regard to fire, police and emergency welfare, even in the event of nuclear war;

(viii) A war supplies agency is being organized to be responsible, among other matters, for mobilizing and equitably distributing stocks of food, fuel and clothing that survive attack;

(ix) Many millions of dollars' worth of emergency health supplies have been stock-piled throughout Canada;

(x) Since 1953, the federal government has maintained at Arnprior, Ontario, a civil defence college at which training has been provided for members of the military services and for federal, provincial and municipal employees and other persons nominated by the provinces and municipalities. This has been done wholly at federal cost.

3(a). The annual defence budget, as a rough estimate, although this includes some elements of support

to (b) but does not include expenditures of other government departments related to defence.

(b). The approximate expenditures over the last six years are as follows:

1957-58	$ 4.1	million
58-59	4.1	"
59-60	15.6	"
60-61	26.2	"
61-62	69.8	"
62-63	40.8	"
Total	160.6	"

These figures cover all federal expenditures including those of D.N.D. for programs of civilian survival.

4(a). $1,590,006,537.

(b). $40,000,000. This figure covers all federal expenditures including those of D.N.D. for programs of civilian survival.

Exercise Tocsin B

Question No. 879—MR. DOUGLAS:

1. Was exercise Tocsin B carried out in the fall of 1961?
2. If so (1) how many Soviet bombers were assumed to have taken part in this simulated attack (2) how many (a) H-bombs and (b) missiles were assumed to have landed on target in (i) Canada (ii) U.S.A. (3) how many (a) H-bombs and (b) missiles were assumed to have landed off target in (i) Canada (ii) U.S.A. (4) what was the megatonnage of the H-bombs and missiles which were assumed to have landed (a) on target (b) off target in (i) Canada (ii) U.S.A. (5) what percentage of (a) bombers (b) missiles were assumed to have been destroyed by the active air defences of NORAD (6) how many Soviet nuclear missile firing submarines were assumed to have taken part in this simulated attack, and how many missiles were they assumed to have fired (7) how many people were assumed to have been (a) killed (b) wounded in this simulated attack in (i) Canada (ii) U.S.A.?

MR. DRURY: 1. Yes.

2. (1) As the exercise did not involve interceptor forces it was not necessary to assume any specific number of enemy bombers.

(2) In order to engage the emergency measures and survival operations systems fully, the exercise plan called for 11 H-bombs and six nuclear warhead missiles to be assumed to have been detonated in specific areas in Canada. A total of 55 H-bombs and nuclear missiles were assumed to have been detonated on targets in the U.S.A., which would have been immediately important to Canada.

(3) It was not necessary for the purposes of this exercise to assume any off target detonations.

(4) (a) (i) 75; (a) (ii) 960; (b) (i) and (ii) not applicable.

(5) As the exercise was not designed to test air defences, no assumptions in relation to aircraft or missile destruction were necessary.

(6) The exercise setting did not differentiate between types of missile delivery.

(7) It was calculated that detonations of the character postulated in the areas chosen would have resulted in 2,215,000 dead and 1,591,000 injured in Canada. No calculations were made in relation to the U.S.A.

H-Bomb Effects

Question No. 961—MR. DOUGLAS:

What is the approximate or estimated effect, with regard to blast, burn, and immediate radioactive fall-out, of the following categories of H-bombs when exploded at 40,000 feet, 60,000 feet, 80,000 feet and 100,000 feet (a) 1 megaton (b) 2 megaton (c) 5 megaton (d) 10 megaton (e) 20 megaton (f) 100 megaton?

ANSWER: Blast: Using as a criterion the bodily removal of exterior wall panels of a frame house, which occurs at overpressure of 2 pounds per square inch, and which is classified as severe damage, the following are the distances from a point on the ground directly below the burst at which this severe damage will occur.

Height of Burst—Feet

Yield of Weapon MT	40,000 Miles	60,000 Miles	80,000 Miles	100,000 Miles
1	*	*	*	*
2	1	*	*	*
5	7	*	*	*
10	11	6	*	*
20	17	12	6	*
100	35	35	25	20

* indicates that the overpressure on the ground does not reach 2 p.s.i.

Immediate fall-out: For all the yields and heights specified, immediate radioactive fall-out is negligible, because the fireball does not touch the ground, and the burst takes place above the regions of the atmosphere in which our weather is formed. For a 100MT explosion, there will be very little immediate fall-out for all heights above 18,000 feet.

Thermal radiation: Using as a criterion 8 calories per square centimeter, at which level human skin will suffer injury corresponding to severe sunburn with blistering, and light kindling materials will ignite, the following are the distances from a point on the ground directly below the burst at which this damage or injury will occur.

Height of Burst—Feet

Yield of Weapon MT	40,000 Miles	60,000 Miles	80,000 Miles	100,000 Miles
1	3	*	*	*
2	8	2	*	*
5	14	13	10	*
10	20	20	20	22
20	28	28	28	27
100	63	63	64	64

* indicates that 8 cals per square centimeter is not reached on the ground.

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THE ROLE OF PREVENTIVE MEDICINE IN NATIONAL SURVIVAL

COLONEL R. D. BARRON, MC, RCAMC, *Director of Preventive Medicine, Canadian Forces Medical Services*

Present Development and Planning

IT has been mutually agreed that service medical units operating under the Army will be responsible for the sorting of casualties, giving very limited initial treatment and organizing the evacuation of casualties as a first link of evacuation chain.

The Role of National Health and Welfare

National Health and Welfare had organized in 1951 a Civil Defence Health planning group which functioned until 1959 when this group became the Emergency Health Services Division of National Health and Welfare. Emergency Health Service has functioned primarily as a planning and advisory agency and has followed the constitutional pattern that health falls within the purview of the provincial government. This also fits the organizational structure of our Canadian Professional and Voluntary Health agencies.

The Role of Preventive Medicine in National Survival

The problems of preventive medicine, hygiene and sanitation that may be encountered in any national emergency may be varied and extreme, and these varied problems may appear early or may occur some time after the initial incident. Similarly, these problems may be associated with the immediate disaster area or may be problems related to or occurring in areas remote from the immediate disaster area.

It is therefore necessary to define clearly the problems of preventive medicine in its broadest sense in relation to variety, and in relation to a time frame, as well as a zonal or area distribution.

Health services must be fully coordinated with other services in a disaster area in order to be effective. The preventive medicine services as well as the medical and surgical services, fire fighting, rescue, transportation, etc., must be coordinated or else further confusion will be created and much effort lost.

Preventive Medicine in National Survival can be divided into three distinct phases. These phases include:

a. A pre-attack phase
b. The Survival phase
c. The Recovery phase

Preventive Medicine in the Pre-Attack

With certain recent developments in the armamentum of the Preventive Medicine and Public Health field there appear to be several specific things or procedures that should be considered now, at this immediate time, which may prove their value in the future.

The development of mass inoculation equipment, and I refer to the jet gun, hypo spray or whatever other trade name may be applied, which has now been used extensively by the Canadian and United States services, offers a method of immunising large numbers of personnel with little effort and manpower requirement. Why shouldn't tetanus toxoid, typhoid, diphtheria, polio or other vaccines be offered to the population by mass inoculation methods?

The development of certain chemotherapeutic agents which have been adequately shown to have a specific effect on protecting against the biological effects of radiation are almost at the end of development and ready for use. The use of these drugs must be considered as a preventive medicine tool in the same way as we now consider our vaccines.

The requirement for storage and stock piling of medical equipment, while not truly a preventive medicine responsibility, is presently being carried out across Canada in newly built, decentralized, Federal Medical Stores Depots which have been located in areas away from likely target areas. While it is true these depots have been built as Medical Equipment Depots for the Canadian Forces Medical Services, a large percentage of their floor space has been designed for and occupied by Emergency Health Services stockpile of medical equipment.

Preventive Medicine in the Survival Phase

During the first few hours, saving of life and prevention of after effects is an all important health service. The medical effort must be united in order to provide the maximum results for the maximum number of people.

If it is accepted that the role and responsibility of the Armed Forces is primarily concerned with the survival phase rather than the recovery phase, then the preven-

tive medicine services of the Armed Forces would be primarily responsible for the preventive medicine programme in the survival phase. Municipal, provincial and federal health agencies should primarily be responsible for a preventive medicine programme in the recovery phase and in the area surrounding or supporting the incident area, and should gradually take over the responsibility from the Armed Forces in the incident area as time progress—and as this area progresses from the survival phase to the recovery phase.

The problems of preventive medicine in the incident area during the survival phase can be reduced in general terms to the following major items:

(1) Thirst—water
(2) Hunger—food
(3) Exposure—shelter
(4) Waste disposal
(5) Communicable disease control
(6) Insect and rodent control
(7) Mental hygiene and special health services.

These items are listed somewhat in order of their need in relation to survival. Water is the first essential survival item closely followed by the requirement for food and shelter. Later, as the survival phase evolves into the recovery phase, such problems as waste disposal, disease control, insect and rodent control, mental hygiene and other special services become of increasing importance.

It is imperative that as early as possible after a disaster strikes, clear, authoritative information about water, food waste disposal, and shelter, be given to survivors. This can best be accomplished by means of broadcasting information by all available means. This function of preventive medicine follows directly along the present lines of responsibility of the Armed Forces. As soon as possible preventive medicine teams should be placed in charge of small areas to educate people and to enforce sound hygiene and sanitary practices.

The problems of preventive medicine and hygiene that may be associated with or encountered by a mobile survival column, (which is the Armed Forces designation of the formation responsible for effecting a re-entry operation) operating in a disaster area are essentially those previously mentioned with the major emphasis on Water Supply, Sanitation and Sanitary problems including vector control, environmental problems, and control of communicable disease.

However, in event of a catastrophe due to a nuclear incident, it must be appreciated that the major problem to consider is the remendous epidemic injury, which it is anticipated would overwhelm existing medical facilities in the immediate post incident period.

This is, however, no reason to neglect the consideration of preventive medicine problems of such an emergency, or their control. To meet the problems of the mobile support column, a very limited staff of service trained hygiene specialists has been provided, namely, one hygiene assistant to each medical officer in the formation.

The role of this technician is to provide assistance and supervision of the necessary drills and skills of hygiene and sanitation, and to protect the health of personnel of the mobile column. He is not designed or intended to cover the whole area and population in which such a mobile support column may be operating.

If, therefore, as has been suggested and outlined, the Armed Forces are given the responsibility for preventive medicine problems in the many various forms in the immediate disaster area or in association with re-entry, in a zone for which a military commander is given responsibility, then an adequate supporting medical unit, containing specially trained personnel in preventive medicine problems capable of splitting up in the numerous teams to provide a supervisory and instructional role, must be provided on adequate scale in the relation to military forces committed. Such an organization as envisaged has been planned for in the formation of the currently proposed field hygiene company. It is not proposed, however, to discuss this unit in detail.

Preventive Medicine Problems in the Recovery Phase

The Preventive Medicine problems that can be expected in the Recovery Phase are multiple and varied. Whereas the problems in the survival area are primarily water, food and shelter, the problems in the recovery phase are, in addition, waste disposal, insect and rodent control, communicable disease control, shelter and special problems.

The latter are likely to be similar to the sequelae of any civilian disaster and will be based on the extent of the transplantation of large groups of population into a substandard environment, and will increase in proportion to the mass of population involved and the duration of the period.

In short, it is envisaged that the situation would be similar to a refugee movement, i.e., people with little if any worldly possessions, existing on the help provided by Welfare and Health agencies, at survival or better levels with a questionable amount of supervision.

The need for planned Preventive Medicine support is therefore essential. Many of the communicable diseases against which we have effective tools will

doubtless increase solely because these tools have not been utilized to their fullest. It therefore behooves every individual to become revaccinated or inoculated to ensure his immunity is active.

There is good reason to believe that the acute respiratory diseases and allied diseases will likely increase and we can expect to see the pneumonitis, influenza, tuberculosis, diarrhoea and enteritis, both infantile and adult, as well as meningitis and encephalitis to increase under these conditions.

Whether smallpox will behave similarly is not beyond possibility and diphtheria, whooping cough, scarlet fever, measles, etc., will no doubt increase even though accepted tools are available for their prevention.

Tetanus is also a potential threat. Yet how many, other than service personnel, are adequately immunized? As a result, antitoxin will have to be used and we can expect an increased incidence of sensitivity or serum sickness reactions.

True, there were no large scale epidemics after Hiroshima and Nagasaki in 1945, but this is no guarantee that under different circumstances epidemics will not occur.

One cannot preclude the possibility of a winter incident, neither, therefore, can one preclude the possibility of typhus, especially if a water shortage occurs concurrently. It is significant that in the winter of 1943, 80% of the white collar class of Naples were infested with lice because of a water and soap shortage. This could happen in Canada.

Frostbite, though not classified as an infectious disease, could achieve epidemic proportions especially if shelter is inadequate.

Let us take a look at Rochester NY in December 1940. Through a misunderstanding, a serviceman making a minor repair to the city water system opened a gate connecting the purified water system and the emergency fire system. The fire system was maintained at high pressure and raw water flowed into the city mains. The mistake was discovered because it was impossible to maintain the high pressure in the fire system; but not before 5 million gallons of raw water had been mixed with the city drinking water. The raw water was definitely contaminated because in a total population of 260,000, within 48-72 hours 30,000 mild cases of gastro-enteritis had occurred. This is quite an outbreak of enteritis and it would be logical to expect an outbreak of typhoid fever to be coincidental because the two diseases invariably go hand in hand. However, in the 2 months following the incident only 5 cases of typhoid fever occurred. This limited outbreak of typhoid occurred only because the carrier population is so small that the risk of a typhoid epidemic in that area of United States is somewhat remote. With approximately 500 cases of typhoid reported annually in Canada, can we expect as good a chance as Rochester or worse if our water and/or sewage lines are cross connected, damaged, etc., as a result of an incident?

The Rochester incident also illustrated another point that is very important. The Department of National Defence has been assigned the responsibility for direction of municipal and other services for the maintenance and repair of water and sewage systems in seriously damaged or contaminated areas. It has been suggested by the Department of National Health and Welfare that there may be a requirement for assistance by Public Health Engineers in this field. The extent of this assistance is presently under study in the Department of National Defence.

The maintenance of public health in the recovery phase must rest primarily, therefore, upon our organized public health structure re-enforced by voluntary agencies. Many of the most highly organized health agencies at local level may be severely disrupted because of their existing location. For the most part the problem must be handled by the health forces in the reception area and satellite areas surrounding the incident area. Many of these agencies may not be highly organized and may be understaffed.

The need, therefore, for full time professionally staffed local health departments will never be as apparent as it will be under these circumstances.

The Role of the Sanitarian in National Survival

In the event of a major disaster the Sanitarian, whether he be military, civilian or industrial, will be vital to the survival of the masses of humanity consisting of displaced and homeless persons from all levels of society and in all states of mental health.

In the situations previously referred to there is a great need for trained personnel to supervise and direct the overall sanitation, not the luxury sanitation of our modern community, but the crude sanitation of survival, the urgent sanitation needed to prevent conditions favourable to the propagation and spread of disease. The individual needed to fill this key role must have in addition to physical fitness and stamina, a knowledge of basic sanitation facilities, devices, and techniques, experience in the supervision of layout, construction, and maintenance, and a knowledge of perimeter sanitation to control disease, the essentials of insect and rodent control, preservation and protection of the available food supplies during storage, distribution and preparation. For these considerations who else but the Sanitarian is available, motivated and

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THE UNITED STATES SENATE

A STATEMENT ON THE CONSTRUCTION OF FALLOUT SHELTERS

By General Earle G. Wheeler, Chief of Staff, United States Army, before special subcommittee to consider H.R. 8200 (Construction of Fallout Shelters) of the Committee on Armed Services United States Senate, 2 December, 1963.

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE:

I appreciate the opportunity to appear before this subcommittee to discuss the subject of civil defense. Speaking both for myself as a professional soldier and for the Joint Chiefs of Staff, a fallout protection oriented civil defense is clearly a necessary element of the total United States national security effort. Our potential enemies have a clear capability for nuclear warfare, and we cannot discount the possibility that such a war may occur. Prudence and plain common sense dictate that we be prepared for it. An adequate program of civil defense should give our population a reasonable degree of protection as well as increasing the credibility of our military deterrent posture.

The balance between offensive and defensive power is not static. We must be as determined to improve our strategic defenses as we have been to build up our offensive power. The objectives of deterrence and of limiting damage on the United States are served by a combination of offenses and defenses. Therefore, realistic national security planning must embrace the needs of both offense and defense.

Recent studies of the vulnerability of the population demonstrate that a civil defense program oriented on fallout protection can reduce the number of fatalities resulting from a nuclear attack by tens of millions. The combination of civil defense and an active antiballistic missile defense is more effective in limiting damage than is either system alone. This is so because an enemy has the option of detonating surface bursts upwind and outside of the ABM coverage, thereby creating extensive fallout in areas covered by these ABM systems, since ABM systems cannot defend against fallout.

While it is true that high yield, high altitude nuclear detonations can cause extensive fire damage to urban areas, atmospheric conditions could severely limit their thermal effects. Furthermore, blast and fallout effects are sacrificed in such usage. Greater damage can be achieved with greater certainty by surface and low altitude bursts with weapons of yields adapted to particular target objectives. Therefore, we do not consider that high yield, high altitude nuclear detonations will represent the major part of future nuclear threats. It follows, then, that it is the radioactive fallout created by surface and low altitude bursts which establishes the need for a fallout shelter system to protect the population.

Fallout shelters are an effective passive defense against this lethal radioactive material. The fallout shelter program offers the quickest and cheapest means of protecting the population. Developing this fallout shelter program to the point where it realistically complements the active defenses does more than merely strengthen the combination of active and passive defense. It puts the adversary on notice that we are able and determined to withstand attack. In effect, this will-to-resist displayed by our population tends to reinforce the nation's over-all deterrent to nuclear attack in the eyes of the world and, particularly, any aggressor.

As far as we can usefully plan ahead, perhaps ten years, we see no prospect of obsolescence of a fallout shelter system. That is, as I indicated, the various types of possible attacks on the continental United States that can be visualized would probably cause widespread lethal fallout radiation covering many times the area of lethal blast, thermal radiation and fire.

To sum up, effective fallout protection of our population, both civilian and military, gives us flexibility in the courses of action we may pursue. We illustrate our national will to aggressors. We improve our deterrent posture, and we increase our capacity to withstand attack. This is why we say that civil defense is a significant part of our national security effort.

This brings me to the relationship between civil defense and the United States armed forces. Civil defense cannot be considered in isolation from other elements of security such as nuclear strike forces, general purpose combat forces, and Reserve Components. These are all related. The effectiveness of one element is influenced by the effectiveness of the others. This means that the armed forces must pay continuing

attention to two related factors with respect to civil defense. These are, first, the extent of damage to be dealt with if nuclear attack does come, and, second, the military operations that are either in progress at that time or are required to put down the aggressor.

Military assistance will complement civil participation in civil defense operations but cannot substitute for such civil effort. The support that the armed forces can give to civil defense depends on the demands of military operations. These operations will either be underway or will have to be undertaken to prevent the aggressor from capitalizing on his nuclear attack.

On the other hand, we recognize that situations may exist where national evaluation shows that civil recovery should have a priority over certain military requirements. These situations cannot be predicted in advance. Meanwhile, a prudent and practical attitude dictates that military forces must fight the aggressor and that military assistance should complement the civil effort in civil defense wherever possible. This is the basic view of the Department of Defense and the Joint Chiefs of Staff on civil defense.

In other words, the armed forces see their role as assisting civil authority to cope with emergencies so that the military forces may proceed with the primary mission of combat operations.

We are now examining methods to improve our capability to provide timely, coordinated response for military assistance to civil authorities in a civil defense emergency. One method favorably considered for improving military support of civil defense is the utilization of the State Adjutants General and their staffs in a planning and coordinating role. Active planning for civil defense support is underway within the Services themselves. Military defense plans are being coordinated with civil defense plans. Military guidance is being furnished to federal, state, and local agencies in developing their plans. Type units are designated for civil defense plans if such units are both required and available. All active units and all Reserve Component units are considered to be available for civil defense missions, but the commitment of a specific unit to a specific mission—combat or civil defense—is conditional on evaluation at the time of the emergency.

In summary, civil defense is an important part of our military posture within the national security effort. Military support of civil defense is necessary, and planning to this end is being accomplished. Formal military commitments to civil defense will have to wait evaluation of requirements at the time of attack. We hope that such attack will never come, but because potential enemies can bring such attack against us, we have to be ready. An organized, effective civil defense program is part of this readiness.

Thank you. ▲

ROLE OF PREVENTIVE MEDICINE (conclusion)

qualified by virtue of training and experience? The Sanitarian should therefore organize and revitalize his thinking along these lines and formulate his plans with such eventualities in mind.

It is my firm belief that if a crisis does develop and an incident does occur, the major if not the total approach, to handling the Preventive Medicine problems in National Survival will rest almost entirely in the hands of the Sanitarian with very little supervision by a Medical Officer or a Public Health Officer whose time in the initial stages, at least, will be fully occupied in casualty care. If the challenge of Preventive Medicine in National Survival is to be met, it must in fact be met by the Sanitarian.

HOUSE OF COMMONS (conclusion)

Fall-Out Shelters, North Bay

Question No. 1,033—MR. PETERS:

Has the emergency measures organization explored the possibility of providing fall-out shelters for those citizens resident in the expected point of contact north of the Bomarc missile base at North Bay and, if so, have the possibilities of fall-out shelters using the abandoned mines at Cobalt and Kirkland Lake been assessed, and what mines, if any, have been found suitable for this use?

MR. DRURY: As has been stated previously, there is no government program to build shelters for the public; however, various possible approaches are under study. In this context, the possible use of mines will be considered.

It will be recalled that, in 1962, the Department of Mines and Technical Surveys conducted, on behalf of the emergency measures organization, a survey of all active mines and some inactive mines of the adit type which were readily accessible and which might serve as fall-out shelters. The actual development of such mines as fall-out shelters would depend on each being studied separately to determine what additional features would be required to provide a safer environment. These features might include lighting, ventilation and, in some instances, pumping equipment. The survey did reveal that, at Cobalt and Kirkland Lake, there were underground workings which, if suitably equipped, could serve as fall-out shelters for the population of these two communities.

As much of the information which was provided by mine owners was on a confidential basis, it is not possible at this time to name these mines.

Progress Report on Civil Emergency Planning of Central Mortgage and Housing Corporation 1961-1963

Emergency Role of Central Mortgage and Housing Corporation

Central Mortgage and Housing Corporation retained its status during the period 1961-1962 as a Group II Department, and, as such, would participate in the early support of Group I Departments during the Recovery Period following a nuclear attack. Emergency planning has become a part of the normal functions of CMHC in which the Corporation has a responsibility.

(A) To make its employees available for survival operations,

(B) To assist in the essential functions of government,

(C) To implement plans for the reactivation of the Corporation.

Survival Training Plan

To equip our employees for survival operations, plans have been developed for their survival training, based on the premise that every employee should be made aware of the problems of survival and appropriate plans of action, and should be given the opportunity to participate in the implementation of those plans. A well-trained nucleus of volunteers instructed in survival methods is needed to ensure that evacuation plans may be implemented. The final objective is considered to be the participation of every employee in some aspect of survival operations.

(A) **Survival Training Program:**

Two major complementary survival programmes have been developed and implemented. The first, *Personal Survival,* is designed to instruct employees in emergency measures to be taken for the survival of the individual and his family. The second, *Civil Defence,* is a phased programme to organize and train a nucleus of volunteers to handle day-to-day emergencies, such as fire, with the ultimate goal being to prepare for a nuclear emergency. This goal would be contingent on the development of Civil Defence and Emergency Evacuation Measures by local municipalities, where CMHC offices are located.

(1) Personal Survival Program:

The *Personal Survival Program* was launched in 1961-1962 in three simultaneous steps—(*a*) Distribution of Survival Literature; (*b*) A Survival Lecture Program; (*c*) Survival Instruction in First Aid. At the end of the first year of operation, the programme was reviewed—modified to meet changing conditions—and placed on a continuing basis. The following subsections contain a report on our present progress under this programme.

(a) *Distribution of Survival Literature*:

In 1961-1962, the programme was based on the distribution of basic literature to each employee's home, followed by making emergency measure literature available in all field offices. The 1962-63 programme was based on displaying such literature from time to time on display boards in each office. During the year, 32 offices (74%) carried out this programme. It is proposed that this programme be continued to display new emergency literature as it becomes available during 1963-64 and that those offices which had not displayed the literature do so at appropriate times. The concept behind this operation is to keep a constant reminder before the employees in order to make them aware of the necessity of survival planning and where to turn for information if required.

(b) *Survival Lecture Programme*:

A Lecture Programme was launched in 1962 with the issuance of a *Lecture Guide* to each field office Emergency Planning Officer. This Lecture Guide was designed to be adaptable to any situation. It outlined a suggested speaker's schedule, lecture note schedule and film schedule. The Guide was supplemented by a set of printed Lecture Notes (English and French) and a Survival Film Commentary on eight selected films. Each local Emergency Planning Officer was requested to adapt the Lecture Programme to fit local conditions while the Regional Information Officer was requested to act as the liaison officer in arranging speakers and films for those offices desiring to use such media.

A Survival Lecture Programme has been completed in 21 offices (50%) while 7 offices have indicated that they contemplate such a programme in 1964. Sixteen offices have stated that they propose to continue the programme during 1964 if new material was available.

The Emergency Measures Organization has advised that new lecture material, including audio-visual aids will be available in early 1964. Tentative arrangements have been made to obtain this material as soon as it is available.

However, in order to introduce a new method of imparting information and bearing in mind the increased work load facing our field offices this winter, seven articles in serial form have been written for publication in *Newsletter* with further articles available.

The articles in the serial will be released on a continuing basis and will deal with the complete field of emergency planning. Each article is to be inserted in *Newsletter* in a manner that allows it to be removed and retained by the employee for future reference.

(c) *Survival Instruction*:

In 1961-62, beginners courses in the "Fundamentals of First Aid" provided by the St. John Ambulance Brigade and Red Cross under the auspices of the Department of National Health and Welfare, was offered to all employees. To date, 221 employees in 18 field offices (42%) have graduated. Further courses were taken in Head Office in which 19 employees graduated in Advanced First Aid and a further 19 in Home Nursing. The Group at Head Office volunteered to enlist in First Aid Teams formed as part of the Accident Prevention Programme and as an adjunct to the Building Warden Organization in the event of an emergency. A recent survey of our offices indicate that 259 employees or 12.1% have graduated in first aid training with a further estimated 135 desiring training. It is recommended that courses in the Fundamentals of First Aid, Advanced First Aid and Home Nursing be again offered in 1963-64 at a time left to the discretion of the Local Manager.

(2) CIVIL DEFENCE:

In the larger offices of the Corporation, a Building Warden Organization has existed for several years to assist in the evacuation of employees from the buildings in case of fire. Our Civil Defence Plan has been developed around the concept of the utilization of this organization for all emergency purposes. All offices have been directed to establish a Building Warden Organization and/or evacuation plans, depending upon the size of the office. Organizational and training programmes have been set up on a phase basis:—

(1) To instruct and train the Building Wardens to deal with day-to-day emergencies. For example, fire drills are held to test Evacuation Plans and to give employees experience. The average time to clear a building for fire drill purposes has been under three minutes.

(2) To organize First Aid Teams from the graduates of the First Aid Courses to become an adjunct of the Building Warden Organization. This programme is now underway at Head Office and may be extended to the larger field offices.

(3) Future phases may see the formation of rescue parties, fire parties, police parties, welfare groups and shelter managers depending on the local emergency plan and the availability of civil defence training in the municipality as well as the future plans of the federal government.

Evacuation Plans and *Warning Systems* have been developed to prepare employees for the steps to be taken on the sounding of the sirens announcing a National Alert or Take Cover. Information on this subject will be imparted in two of the articles appearing in Newsletter while each Emergency Planning Officer will receive a Guide outlining details to carry out evacuation in the event of nuclear warning. The local *Evacuation Plan* is to be developed in conjunction with local municipal emergency plans.

Pilot studies of office buildings owned by the Corporation are underway to obtain the exact *protective factor* from nuclear radiation in each part of the building. These studies are being carried out by a small cadre of CMCH personnel who have been trained as Instructors in Shielding Analysis Techniques. It is hoped that realistic evacuation programmes can then be developed from the results of the studies.

To-date, 20 offices (47%) have indicated that Building Warden Groups have been organized while Evacuation Drills have been carried out in 14 offices. First Aid Teams have been formed at Head Office, provided with first aid equipment and are scheduled for special training. Consideration is being given to instruction in Emergency Feeding in those offices where cafeterias are located. Most of the major field offices now have the capability to develop first aid teams with additional training being offered in 1964 to graduates of the "Fundamentals of First Aid Courses". (Halifax, Toronto, Ottawa, Hamilton, Scarborough, Winnipeg, Vancouver).

(B) **Assistance in the Essential Functions of Government:** (Continuity of Government)

The Corporation, as part of its emergency function, assists the Emergency Measures Organization and specific Emergency Departments requiring our services in the essential functions of government designed to maintain continuity of government at federal, provincial and municipal levels in the event of a nuclear emergency. The Emergency Measures Organization, which recently became a government department reporting directly to the Minister of Defence Production, has as one of its emergency responsibilities, the role of the co-ordinator of the Emergency Plans of other departments and agencies of the Federal Government. The Corporation works closely with EMO in carrying out its emergency functions and obtain much valuable assistance in developing and operating its personal survival programmes. In addition, CMHC personnel attend Orientation and Staff Duty Courses conducted by EMO across the country. It is a cardinal rule of the Corporation that staff assigned emergency tasks shall attend Orientation Courses as soon as possible after appointment to an emergency position. To-date, over 30 personnel have been sent on such courses.

War Supplies Agency:

CMHC has appointed officers at Ottawa and in the field to fill the position of Chief, Dwelling Repair Materials, at the National and Regional Headquarters

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MUNICIPAL SURVIVAL PLANNING

by
J. F. WALLACE
Assistant Director
Federal Emergency Measures Organization

Introduction

To a great extent the success of our efforts in developing measures for survival in the event of nuclear war will depend on the effectiveness of emergency plans which will have been prepared by Canadian municipalities. Because no one can predict where nuclear explosions will take place, or what sections of the country would be covered by radiation fallout it has been the aim to have each and every municipal government prepare plans for emergency situations.

In Canada there are over 2,000 incorporated cities, towns and villages. In addition there are over 2,200 townships, municipal districts or unincorporated municipalities. As well there are over 160 county governments. Each of these governments has an inherent responsibility to develop emergency plans. In reviewing the development of emergency planning among Canadian communities one finds a variety of methods being adopted. For example some municipalities organize as individual cities or towns, others are grouped under a county or area organization. In all over 1,700 individual municipalities are participating in the development of emergency plans. At this time these municipalities are grouped into some 400 area-organizations.

For the first time since civil defence measures were adopted in 1948 the provinces and federal EMO in 1963 made a concerted effort to obtain a comprehensive picture of what was going on in municipalities. The main purpose of this paper therefore is to state in general terms what might be termed "the findings" of this review with the hope that municipal emergency planning will be more positive in future. However, before coming to the main review the following statistical information for 1962 should be of interest:

1. Number of Municipal employees assigned emergency tasks	66,907
2. Number of Volunteers participating in the programme	118,921
3. Number of municipalities which have:	
(*a*) reception plans	98
(*b*) carried out public education	213
(*c*) conducted training courses	221
4. Number of persons who received training	31,801
5. Number of training courses conducted	1,540

The Survival Planning Guide for Municipalities

Eearly in 1961, federal EMO issued Part I of the 'Survival Planning Guide for Municipalities'. The purpose of the Guide was to give municipal authorities (elected and otherwise), guidance on:

(*a*) the need for emergency measures planning;
(*b*) the general nature of the problems which might confront them;
(*c*) the procedures for organizing emergency measures within the context of municipal government;
(*d*) the procedures and organization required to meet the problems arising out of nuclear attack.

All this was contained in Part I of the Guide. Part II of the Guide, parts of which have been issued, is to contain rather more detailed information on the various emergency services which require development at the municipal level.

The Guide, when completed, will provide information on all aspects of emergency measures that might arise at the municipal level. It must be recognized that all of what is, or will be contained in the Guide, is not necessarily applicable to every community. Communities vary in size, are assigned different tasks, have varying types of municipal services. For these reasons, the provision of specific information and assistance on municipal emergency planning matters must be provided by the provincial authorities. Some provinces are doing better than others in this respect. Those provinces which are providing positive assistance, do so by precise written instructions and guides, followed up by visits to the municipalities, by conducting annual conferences of municipal organizers, and, in some cases, by providing printed formats of basic survival plans. Without this type of activity by the provincial authorities, the federal planning guide would be, for many municipal authorities, relatively meaningless.

Municipal Annual Progress Reports

In 1962, federal EMO, with the assistance of the provinces, designed the Municipal Civil Defence/Emergency Measures Annual Progress Report. The purpose behind this report is to provide provincial and federal EMO's with basic information about the status and progress of planning at the municipal level of government.

The Report has 10 sections. Some sections are divided into parts. By studying each report and relating the various parts and sections, a fairly good picture can be had of the status of planning and scope of activities in any municipality. On the basis of the current review, it is quite clear that insufficient

guidance has been provided to municipalities on the precise nature of their emergency organization, plans and programmes. This is particularly true in the case of municipalities under 5,000 in population.

General Comments on Municipal Planning

Remarkably few municipalities have in existence written survival plans, although a sizeable number of them have been organizing for a number of years. On the other hand, it must be recognized by both federal and provincial officials, that the organization in the smaller communities revolves around the time and effort which can be given by part-time co-ordinators. Consequently, it is important to recognize that planning in these communities will be at a slower pace than in communities where full-time persons are employed. It is also important that provinces devote considerably more time to assisting these co-ordinators in carrying out their responsibilities. The annual reports reveal that many small municipalities are trying to organize emergency services which are not really required in most of them. For example, some municipalities under 1,000 in population, report efforts to develop an engineering service. It is difficult enough for larger municipalities which have existing engineering services in peacetime, to develop emergency plans without having these smaller communities devote their valuable time to services which probably are not required by them in the event of a national emergency, any more than they are required in peacetime. Such activity might be useful but is hardly essential.

It should be obvious that the framework around which an emergency organization can be developed in a village of 200, is somewhat less than in a town of 5,000. In the village, apart from the Council, there are usually only two persons who can be said to be the municipal employees, viz., the clerk or treasurer and the part-time paid co-ordinator or director of emergency measures. In the town of 5,000 it is quite possible that there are full-time persons employed in most phases of municipal government. Consequently, such communities should be able to develop much more comprehensive plans for survival. Nevertheless, in both communities, each must have the same basic programme for survival. As the size of the community increases, other aspects of survival become applicable so that practically all measures or activities suggested in the Guide and the Report become pertinent.

Another problem of some concern revolves around the many area and county organizations which are being established. It must be recognized that such area organizations have a distinct advantage from an administrative point of view, but the question arises whether sufficient attention has been devoted to the planning of survival activities and their operation in the several municipalities which come under the general supervision or direction of the area or county organization. Even in peacetime, area or county municipal governments handle only those area or county problems which, of necessity, require co-ordination of a central agency. The determination of the basic municipal services required by a municipality is usually the inherent responsibility of the municipality within the area or county. In relation to survival planning within a county or area organization, who is responsible within a community or area, for assessing the fallout protection of dwellings, for making the detailed arrangements to receive and handle evacuees, for detecting radioactive hazards, for informing the residents of the community of the likely hazards, the measures of protection, and so forth? It is matters such as these which must be developed in each individual town or village within the county, for these are the very matters which may well arise in such towns and villages during an actual emergency.

The basic survival plan for any community, large or small, must revolve around the following:

(*a*) the continued operation of the government and its essential services;

(*b*) a positive programme of information to the population of the community;

(*c*) a plan for the protection of those in the community against the hazards of nuclear war; and

(*d*) the task of the community within the provincial plan for survival operations.

The remaining part of this paper is devoted to some suggestions for organizing the smaller communities so that a basic plan for survival can be prepared. Communities in excess of 5,000 in population will find more guidance and information in the Survival Planning Guide to cover those other aspects of emergency planning which have particular relevance to them.

Organization

1. *Municipal Emergency Headquarters*—The headquarters staff should include:

   (*a*) elected officials;

   (*b*) the civil defence/emergency measures officer;

   (*c*) the heads of each of the services mentioned below; and,

   (*d*) a small supporting staff (clerks or typists).

   The total number involved probably would not exceed 10 to 15 persons.

   This staff will be required to operate from a central location in the community. The location may be in the basement of one of the buildings in the community, and provision should be made to increase its fallout protection factor.

2. *Communications*—In the first instance, reliance must be placed on the existing telephone service. But, because of the possibility of disruption, consideration should be given to having a radio back-up to the area, county or zone headquarters. The communication service would therefore involve a

person to receive telephone calls, and a person capable of operating the radio.

3. *Emergency Welfare*—The smaller communities do not have a peacetime welfare organization, and whatever welfare is administered in these communities, is handled usually by the municipal clerk or treasurer. Nevertheless, most small communities have been designated as reception communities and provinces should designate the number of evacuees they should plan to receive. Therefore, a person with good organizational ability should be appointed to make the necessary arrangements for handling evacuees.
4. *Radiological Defence*—Radiation fallout could become the most serious hazard to the residents and evacuees in a small community. A person, preferably with sufficient education to grasp the technical aspects of radiological defence, should be appointed to be head of the municipal radiological defence service. Supporting him in the headquarters should be some person to plot radiation fallout information on a map of the community. This service will require Radiation Monitors, who will be trained to use the radiation detection equipment. These monitors would, in all probability, have to operate from their own homes in an emergency.
5. *Wardens*—Because of the importance of informing all residents of the community of the hazards of nuclear war, the survival measures which can be taken, and the plans of the community, it is felt that this important task should be assigned to a Warden Service, comprised of possibly five persons. Because of the small size of the community, it is for consideration by provinces and municipalities, whether the functions of the Warden Service and Radiological Defence Service could not be conveniently combined. The main duties of the Warden Service are pre-emergency, while the duties of the Radiological Defence Service are post-emergency.
6. *Fire*—Many of our smaller communities have peacetime volunteer departments. All communities should be encouraged to develop this important service. In the event of an emergency, it is likely that an influx of evacuees using makeshift arrangements, could increase the fire hazards considerably, consequently, as many people as possible should be trained in basic firefighting skills and practices.

Plans

1. Each of the heads of the services mentioned above, mainly because these services rely on volunteers, should prepare a basic written plan showing how the service is to operate. The content of the operating service plan should be issued or detailed by the provincial authorities.
2. Based on an assessment of the protection which is available (mainly basements of dwellings) a written plan should be prepared to show how the residents and expected evacuees should be dispersed and placed in the event of fallout.
3. A written plan should be prepared which will outline the arrangements to handle the expected load of evacuees.

Programmes

Programmes or activities which should be conducted within the municipality should be designed to ensure that those persons who comprise the emergency organization are trained in their duties; and that the basic survival plan (1, 2 & 3 above) is developed. There are four basic programmes which should be carried out on a continuing basis.

1. *Training*—Each person in the proposed emergency organization should be given a general orientation course on the broad aims and objectives of emergency measures. As instructors or courses become available through the auspices of the province, zone, area or county organization, the heads of the various services should receive training which is applicable to their responsibilities. Every advantage should be taken to train each person in the organization in first aid.
2. *Studies and Exercises*—For smaller communities there are two basic studies which should be conducted. The first would be a study directed to an analysis of the proposed plan for the reception of evacuees. The provinces should be of assistance here. The second type of study would be the analysis of the problems which would arise should the community be warned of likely fallout. These two studies should be conducted in alternate years as a minimum. Small practical exercises related to the plan, or to the operation of an emergency service should be arranged to help volunteers become more proficient in their duties.
3. *Fallout Protection Survey*—Each dwelling in the community should be assessed to determine its protection factor. The shelter plan will be based on this assessment. A rule of thumb guide for carrying out such surveys has been issued recently by federal EMO.
4. *Public Information*—The importance of keeping the public informed should be uppermost in the minds of all who are responsible for organizing emergency measures. Smaller communities do not normally have the facilities (press, radio & TV) for informing the public. The local co-ordinator or director should handle this programme as part of his responsibilities. To a great extent he must rely on the public information programmes of provincial and federal governments. His local programme should revolve around the distribution of

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CONSTITUTIONAL AND LEGAL ASPECTS OF EMERGENCY PLANNING

by

BRIG. W. J. LAWSON

Judge Advocate General of the Canadian Forces

To understand the constitutional and legal aspects of emergency planning it is necessary to have a clear understanding of certain basic principles of Canadian constitutional law. We have in Canada a federal system of government. By the British North America Act, our basic constitutional statute, certain powers of government are given to the Dominion, others to the provinces. Generally speaking, matters of national concern fall in the federal field, while matters of local concern fall in the provincial field.

Where both the provincial and federal governments have power to legislate in the same field, as they obviously must do in many instances, provincial laws in the field are valid, unless in conflict with federal laws in the same field. In this case the federal laws take precedence and the provincial laws are ineffective.

It is my opinion that in the field of emergency planning the federal government has paramount jurisdiction. The opening clause of section 91 of the British North America Act gives the Dominion power to "make laws for the peace, order and good government of Canada in relation to all matters not coming within the classes of subjects by this Act assigned exclusively to the legislatures of the provinces." As emergency measures are not assigned exclusively to the legislatures of the provinces, it would appear that under section 91 paramount jurisdiction in this field rests with the Dominion. Again, section 91(7) of the British North America Act gives exclusive legislative jurisdiction to the Dominion in the field of "militia and military and naval services and defence." Emergency measures are, in my opinion, a branch of defence, and so the federal government may legislate in this field under this section of the British North America Act.

Notwithstanding the paramountcy of Dominion emergency measures legislation, the provinces may enact valid legislation in this field under section 92 of the British North America Act, by which they are empowered to make laws dealing with "property and civil rights in the province." Such provincial legislation will be fully effective as long as it is not in conflict with federal legislation.

Notwithstanding its undoubted power to do so, the Dominion Government has not as yet seen fit to legislate extensively in the emergency measures field. There is no Canadian Emergency Measures Act or Civil Defence Act. In the absence of federal legislation, all the provinces, except Ontario, have enacted civil defence legislation. Ontario has an order in council which sets up a civil defence organization but gives it only co-ordinating and not executive powers.

The legislation of the other provinces relates to measures to be taken in case of actual or apprehended war, and in all provinces, except Quebec, Alberta and British Columbia, also covers civil disasters. In each case the administration of the act is entrusted to one of the provincial cabinet ministers. Under the minister there is in each province an official usually known as the co-ordinator who is charged with the responsibility of co-ordinating all civil defence activities and with carrying out the provisions of the act and any regulations made thereunder. The acts vest the Lieutenant-Governors in council with broad powers to meet any emergency or unforeseen circumstances that may result therefrom. Powers are granted to prepare comprehensive plans for civil defence, to co-operate with the federal and other governments, to acquire real and personal property, to procure food, medicine and other supplies needed in a disaster, to make necessary regulations and do other things necessary for carrying the provincial civil defence plan into effect. Authority is granted in most cases to enter into civil defence agreements with the federal government, other provincial governments and municipalities.

While the provincial co-ordinators working under the designated ministers are responsible for the over-all operation of the provincial acts, municipalities are authorized to deal with what are essentially local civil defence problems. They are empowered to borrow, levy, appropriate or expend money required for civil defence, to make contracts for civil defence purposes, to provide for the health and safety of persons and property, and to employ persons needed for civil defence. British Columbia operates on a somewhat different basis at the municipal level. That province is divided into target areas designated as such by the Lieutenant-Governor in council. Upon the designation of a target area a Civil Defence Control Committee comprising repre-

sentatives of each municipality within the area is established. This committee exercises the civil defence powers normally granted to municipalities in other provinces.

The broad powers to interfere with persons and property given by the provincial acts can be exercised only on the declaration of a state of emergency by the Lieutenant-General in council. It should be noted, however, that there is no specific section in the Quebec statute concerning the declaration of a state of emergency. Under the Saskatchewan and Nova Scotia acts the minister may declare a part of the province to be a disaster area if he considers the disaster to be only of a regional nature.

Notwithstanding the fact that there is no federal emergency measures legislation as such there is the War Measures Act. In the event of war, invasion or insurrection, real or apprehended, that Act empowers the Governor in Council to "do and authorize such acts and things and make from time to time such orders and regulations as he may . . . deem necessary or advisable for the security, defence, peace, order and welfare of Canada." The practical effect of this Act is to enable the Governor in Council in time of war or apprehended war to legislate in any field within the jurisdiction of the Dominion Parliament. It would be possible, therefore, if war were imminent, for the Governor in Council to enact whatever orders he considered necessary or desirable to enable the civil defence organizations, federal, provincial and municipal, to function effectively throughout Canada. The necessary orders have in fact been drafted and are included in the Government War Book. These orders deal with such matters as the control of traffic, communications, illumination and broadcasting, the internment of aliens, prevention of sabotage and looting, and the many other matters that must necessarily be controlled in time of emergency. The regulations are intended to give to the authorities, both civil and military, all of the legal powers they will require to carry out the necessary emergency measures.

Having looked at the legal structure for civil defence and emergency measures in Canada, let us now see who is responsible for exercising the legal powers vested in the federal and provincial authorities.

Federal responsibility for civil defence was originally vested in the Minister of National Defence. Section 4 of the National Defence Act, which is the only legislation on the subject, provides that "the Minister (i.e., the Minister of National Defence) has the control and management of all matters relating to national defence, including preparation for civil defence against enemy action." The authority of the Minister of National Defence in respect of civil defence was some years ago transferred to the Minister of National Health and Welfare by an order in council under the Re-arrangement and Transfer of Duties Act. The Civil Defence Order, 1959, made under that same Act has in turn divested the Minister of National Health and Welfare of a large part of this responsibility and has divided it among several ministers.

Under the Civil Defence Order, 1959, the Minister of National Defence, operating through the armed services, has the following civil defence powers, duties and functions:

(*a*) establishment and operation of a system to give warning of an attack to the public and to determine the location of nuclear explosions and the pattern of fallout;

(*b*) assessment of damage and casualties;

(*c*) re-entry into damaged or contaminated areas and direction of police, fire and other services therein;

(*d*) emergency support of provincial and municipal authorities in the maintenance of law and order; and

(*e*) the operation of emergency communication facilities.

The Minister of National Health and Welfare is charged with the responsibility of affording assistance to provincial and municipal authorities in connection with the organization of medical and public health services, and services to provide emergency accommodation, feeding and welfare to persons who have left their homes.

The Minister of Justice, operating through the RCMP, is required to assist provincial and municipal authorities in maintaining law and order and controlling and directing traffic in connection with civil defence exercises and operations.

In July 1963, the general direction of EMO was transferred from the Office of the Privy Council to become a responsibility of the Minister of Industry. With this change the Civil Defence College at Arnprior, formerly under the Department of National Health and Welfare, was brought under EMO for policy and direction. The Minister of Industry, acting through the EMO is charged with the responsibility of co-ordinating all civil defence planning, the preparation of civil defence plans in relation to matters that are not the responsibility of any other minister, assistance to provincial and municipal governments and liaison with other countries and NATO on matters relating to civil defence.

In this connection it should be noted that a new agreement between Canada and the United States was signed in Ottawa during November 1963, which superseded the old agreement of March 1951. Providing for mutual assistance between civil authorities of the two countries in the event of attack on either country, the new agreement will also facilitate direct communication for detailed and technical consultation between national authorities; the exchange of information on matters of purely national concern; the advancement of joint planning by the establishment of sub-committees or working groups and joint civil emergency planning by

appropriate authorities of adjacent state, province and municipality.

Civil defence, as its very name implies, is not primarily a military function. It has, however, always been recognized in Canada, as in other countries, that where the civil authorities are unable to cope adequately with a situation it is the duty of the military to aid, supplement, or even if necessary temporarily replace the civil authority. With the type of attack that may be expected on this country in a modern war it undoubtedly will be necessary for the military at least to assist the civil authorities and possibly to take over entirely from them in certain areas on a temporary basis.

We will now examine the legal aspects of the use of the armed forces for these two possible situations, that is, assistance to the civil authorities and taking over from the civil authorities. The type of military action that will be required in both these situations falls in turn into two categories: first, physical assistance, such as caring for the injured, clearing of debris, decontamination, transportation, communication, etc.; and second, the maintenance of law and order.

Let us now look at the legal position with respect to the employment of the forces, both regular and reserve, to assist the civil authorities in an emergency. The first thing to be noted in this connection is that such assistance is an army responsibility. The Royal Canadian Navy and the Royal Canadian Air Force may be called upon for assistance, if necessary, but such naval and air forces as are used will reinforce the army and will operate under the over-all command of the army.

Certain functions of the Services under paragraph three of the Civil Defence Order, 1959, can be carried out without any request from the provincial authorities. Others of those functions, however, interfere directly with matters normally falling within the sole discretion of provincial governments. For example, sub-paragraphs (*e*) and (*f*) provide that the Minister of National Defence shall take over the direction of police, fire, and other municipal services in seriously damaged areas. Sub-paragraph (*g*) provides that the Minister shall provide emergency support to provincial and municipal authorities in the maintenance of law and order. I should think that normally such direction would only be exercised or support given if requested by the local authorities, if such authorities were in fact functioning.

Section 221 of the National Defence Act requires a requisition by the provincial attorney-general for the armed forces to come to the aid of the civil authorities in the maintenance of law and order. Normally, therefore, the military commander will act only when requested to do so by the appropriate provincial authorities. When the troops are called out in aid of the civil power to assist in the maintenance of law and order they are given by section 225 of the National Defence Act all of the powers of police officers and, in addition, will have wide powers under the provincial civil defence acts and the Defence of Canada Regulations. It is not possible at this time to go into all of these powers but I think it can safely be stated that they will be adequate to enable the troops to carry out legally any action necessary to assist the civil authorities in dealing with an emergency.

A soldier, and more particularly an officer, when acting in aid of the civil power is in a very delicate position. If he uses greater force than is necessary in the circumstances, or damages property without just cause, he is liable to both a criminal prosecution and a civil action for damages. Obedience to orders is only an answer to such a prosecution or action if the order was not manifestly unlawful. For example, if there is a riot and the troops are ordered to fire on the rioters and private "X" kills one of the rioters, he may be charged with and convicted of murder if the court finds that it should have been apparent to him that it was not reasonably necessary under the circumstances to open fire. This is more a theoretical than a real problem, however, as there is no doubt that it would have to be a flagrantly wrongful act before a court or jury would convict under these circumstances.

I have been dealing so far with aid to the civil power in an emergency situation. A more difficult and unprecedented situation would arise should the civil authority break down entirely, that is, should there be no functioning civil government or civil law enforcement agencies in large areas of the country. This, one will appreciate, is by no means an inconceivable situation and it is one which we must be prepared to meet. Under these circumstances I suggest that the only possible means of controlling what might be very great areas of the country would be by the imposition of martial law as a temporary measure.

Martial law in the sense of the military government of a part of Canada by the Canadian forces is unknown to the law of Canada. We have nothing equivalent to what is called in France a "declaration of a state of siege" under which the authority ordinarily vested in the civil power for the maintenance of law and order passes entirely to the army. This is not to say, however, that the Crown in Canada may not use its armed forces to repel force by force in the case of insurrection, riot, or any other violent resistance to the law. In Canada soldiers may suppress riots just as they may resist invasion. They may fight rebels just as they may fight foreign enemies, but they have no right under the law to inflict punishment for riot or rebellion, and if they do purport to inflict such punishment the members of the forces concerned technically would be civilly liable therefore.

However, at a time of complete breakdown of the civil authority some other authority must take over and it would be the clear duty of the senior military commander in the affected area under these circumstances to act to maintain law and order. If this duty cannot

be carried out in any other way, he should proclaim martial law and proceed to govern the area in which he is operating by means of his military power and through military courts. In doing this a military commander must, of course, co-operate to the fullest possible extent with any civil authority that may still be in existence. He should obtain whatever civil sanction may be possible for his acts.

The proclamation of martial law would have no legal effect but would serve as formal notice to the inhabitants of the affected area that the commander intended to maintain law and order by means of his military power. In enforcing martial law a military commander and those serving under him would technically be acting illegally in attempting to control and administer the civil population without the sanction of the civil authority. For example, if a military court were to sentence a civilian to death and the sentence were carried out, its members might technically be charged with murder. However, provided a commander and his subordinates acted reasonably they would undoubtedly be protected when the civil authority was re-established by means of an act of indemnity passed by Parliament. Such an act in effect makes legal what was illegal when it was done. It would confirm the sentence imposed by the military courts and take away all rights of action any civilian might have arising out of the manner in which he and his property had been dealt with by the military authorities.

There is yet another possible method of legalizing military control of the civilian population and that is through an appropriate order made under the War Measures Act vesting the necessary powers in military commanders and military courts. Notwithstanding that the Cabinet had ceased to exist, such an order could be made by the Governor General or his successor, who would be one of the justices of the Supreme Court of Canada, on the recommendation of any available privy councillors. There are several hundred members of the Privy Council who have full legal authority to act as advisers to the Governor General, notwithstanding the fact that under our constitutional practice they never do so act as long as the Cabinet is able to function.

If military control has to be resorted to for the purpose of maintaining law and order it would, of course, only be a temporary measure. It would be the duty of the commander to do everything in his power to assist in the re-establishment of the civil authority and to turn over control of such authority as soon as it was re-established. ▲

PROGRESS REPORT CMHC (conclusion)

of the War Supplies Agency. This Agency is charged with full responsibility for all aspects of control over the production, distribution and pricing of supplies, both civil and military. In peacetime, emergency planning and organizing of this Agency is carried out by the Emergency Supply Planning Branch, Department of Defence Production. Ten members of the Corporation have been assigned to this operation.

Wartime Accommodation and Construction:

The federal Department of Public Works has been given the responsibility for the overall co-ordination of planning and organizing agencies which have the capacity to control and carry out wartime accommodation and construction in a nuclear emergency. The Emergency Plan contemplates a number of broad emergency functions being carried out on a decentralized basis with the control element being the responsibility of the federal authorities and the regional, zonal and municipal elements being the responsibility of the provincial authorities, both for detail planning in peacetime and operations in an emergency.

The broad emergency functions which have been agreed upon generally by the provinces are as follows:

(*a*) The control of the use of all accommodation,

(*b*) The provision of emergency housing, including associated utility services,

(*c*) Federal/Provincial arrangements for the maintenance and construction of roads and road bridges,

(*d*) Control of engineering and construction resources,

(*e*) Maintenance, repair, reconstruction and construction of ports, harbours and inland waterways facilities.

The provinces have indicated that they would allocate the above functions to their departments which presently carry out similar peacetime operations. Meetings will now be held in each province to develop specific details and allocation and organization concepts.

The Department of Public Works has been assigned the responsibility for the above emergency planning in *consultation* with Central Mortgage and Housing Corporation. Mr. H. C. Linkletter, Executive Director, is a member of the Policy Committee while the Emergency Planning Officer is an active member of the Emergency Planning Committee of Public Works in developing plans for programmes to carry out the emergency functions.

The development of organizational plans for each function is now under study with the Corporation being involved in the planning of emergency housing construction, emergency accommodation and allied roles. CMHC has agreed to provide staff to the National Headquarters at the federal level and to second staff to provincial, regional and other units upon request from the appropriate Provincial Authorities.

An interim *Readiness Plan* is now being developed whereby personnel from Public Works and the Corporation will be called upon to cover key positions until the final plan is capable of being fully implemented. The Corporation's contributions will mainly be in the fields of emergency housing, utility services, control of dwelling accommodation and rent and sales controls.

Other Assistance:

From time to time, the Corporation assist other emergency departments in carrying out their operations through specific assignments. Assistance of this nature has been provided to the Department of National Defence, the National Emergency Manpower Authority and to the Department of National Health and Welfare.

(C) To Implement Plans for the Reactivation of the Corporation:

CMHC is presently designated as a Group II Department hence will be required to operate in support of the Group I Departments, particularly in the early Recovery Phase in order to carry on the essential functions of government and to maintain the economic life of the country. During the Shock Phase following an attack, the Corporation will cease to operate with the exception of a small nucleus of staff assigned to man certain key offices of the Corporation which would become relocation sites where surviving personnel of the Corporation would be directed to report when CMHC is re-activated. These key offices would also maintain essential records for the restoration of the Corporation. The remainder of CMHC personnel will make themselves available to the National Emergency Manpower Authority and instructions will be issued from time to time by this Authority directing various occupational classes of people to go to Personnel Reporting Centres where their specific attributes are required; including duties connected with the re-activation of the Corporation.

The Corporation has identified its essential records and has taken steps to store these records in a special emergency site designed for their preservation. Back-up Records in field offices are now being considered. The essential record programme of the Corporation is an extension of the existing vital records since it was considered preferable to select essential records on the basis of normal peacetime operations and adapt such records to meet emergency conditions when the latter become known.

Preliminary plans have been developed in which key offices have been tentatively identified. Further detailed considerations must be given to the selection including the development of manning capabilities by essential staff. A phase programme of utilizing present existing offices is contemplated until permanent relocation centres can be developed based on the necessity as created by international conditions.

Emergency Planning has become a part of the normal functions of the Corporation but can be used only as an educational and training device to guide people in the event of an emergency, so that they will rely on their own common sense and knowledge to evaluate a situation and take the necessary steps in response to it. It is envisaged that in addition to the normal responsibilities that each employee carries with his job, there will be an emergency responsibility so that the Corporation will have the capability of meeting any kind of emergency that may arise. ▲

MUNICIPAL SURVIVAL PLANNING (conclusion)

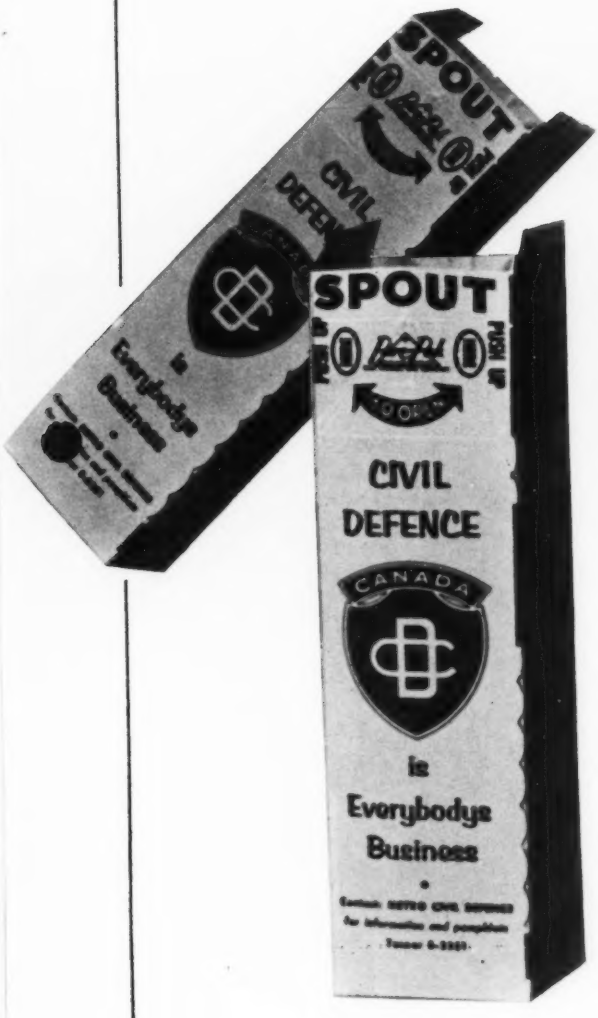
emergency measures literature, lectures and film showings to interested groups, and possibly an annual evening Orientation Session for the residents of the community.

But even in a small community it is essential that the residents be completely famiilar with details of the local plan for survival which they would need to respond effectively in an emergency. Publication of such details in a pamphlet or leaflet, therefore, should be considered.

Also, the local survival plan should include the organization and means by which municipal authorities will disseminate information, instructions and advice to the public in a natural disaster or a war. In some communities this could be accomplished by the editor of the community's weekly newspaper working with the mayor.

Conclusion

Survival during the chaos of nuclear war will depend upon the leadership and guidance which must be provided to people by their municipal governments. Because nuclear war could take place with little advance warning emergency plans must be prepared in peacetime. It is therefore important that the more senior levels of government do what is necessary to help municipalities prepare uncomplicated but nevertheless useful plans and programmes. ▲



An eye catcher, this interesting method of Civil Defence promotion. 65,000 milk cartons carrying the Civil Defence slogan were distributed daily in Metro Winnipeg during a five week period.

If undelivered return to:
EMERGENCY MEASURES ORGANIZATION
Office 420, Daly Building,
Ottawa, Canada

OFFICIAL POSTAL FRANK

A. B. Curry

Emergency Measures Organization